

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A magnetically navigable catheter for delivering medical treatment to a particular part of the body, the catheter comprising:

an extension member having a proximal end and a distal end, the extension member being slidably mounted in the sheath so that the distal end portion of the extension member telescopes from the distal end of the sheath, the distal end portion of the extension member being relatively more flexible than the distal end of the sheath;

an electrode at the distal end of the extension member, being connectable to a source of energy to permit ablation of tissue in contact with the electrode to create at least a focal lesion; and

at least one magnet on the distal end portion of the extension member to allow the distal end of extension member to be oriented by the application of an externally applied magnetic field, wherein the distal end portion of the extension member containing the electrode and the at least one magnet is relatively rigid and the portion of the extension member proximal to the at least one magnet is flexible, such that the catheter bends at a point proximal to the distal end portion having the at least one magnet.

2. (original) The catheter according to claim 1 wherein there are a plurality of magnets on the distal end portion of the extension member.

3. (original) The catheter according to claim 1 further comprising at least one electrode on the distal end of the extension member.

4. (original) The catheter according to claim 3 wherein there is a first electrode on the distal end of the extension member, and a second electrode on the distal end portion of the extension member, proximal to first electrode.

5. (original) The catheter according to claim 3 wherein there are two electrodes on the distal end of the extension member, electrically insulated from each other.

6. (original) The catheter according to claim 1 wherein the distal end portion of the extension member comprises a hollow flexible tube, and wherein there are a plurality of magnets disposed in the hollow tube.

7. (original) The catheter according to claim 6 wherein the plurality of magnets are adjacent to each other in the extension member, held together by mutual magnetic attraction.

8. (original) The catheter according to claim 1 further comprising a sleeve, having a proximal end and a distal end, the sleeve being slidably mounted in the sheath so that the distal end portion of the sleeve telescopes from the distal end of the sheath, so that the sleeve can be selectively extended and retracted relative to the sheath, and wherein the extension member is slidably mounted in the sleeve in the sheath and can be selectively extended and retracted relative to the sleeve.

9. – 11. (cancelled)

12. (currently amended) A magnetically navigable electrode catheter comprising:

a proximal end and a distal end, and a lumen extending from the proximal end outside of a subject's body to the distal end, for delivery of fluids therethrough; a first electrode at the distal end of the electrode catheter having at least one passage therethrough for delivery of fluids to the distal end of the catheter, a second electrode spaced proximally from the first electrode, and at least one magnet at the distal end portion of the catheter, to allow for orienting the distal end portion by the application of an externally applied magnetic field, the magnet having a passage therethrough for delivery of fluids to the distal end of the electrode catheter, wherein the distal end of the electrode catheter is adapted to be slidably mounted in a sleeve so that the distal end portion telescopes from the distal end of the sleeve.

13. (previously presented) The electrode catheter according to claim 12 wherein there are a plurality of magnets on the distal end portion of the electrode catheter.

14. (previously presented) The electrode catheter according to claim 12 wherein there is a first electrode on the distal end of the electrode catheter having at least one passage therethrough for delivery of fluids to the distal end of the catheter,

and a second electrode on the distal end portion of the electrode catheter having at least one passage therethrough for delivery of fluids to the distal end of the catheter.

15. (previously presented) The electrode catheter according to claim 12 wherein there are two electrodes on the distal end of the electrode catheter, electrically insulated from each other.

16. (previously presented) The electrode catheter according to claim 12 wherein the distal end portion of the electrode catheter comprises a hollow flexible tube, and wherein there are a plurality of magnets disposed in the hollow tube.

17. (previously presented) The electrode catheter according to claim 16 wherein the plurality of magnets are relatively closely space within hollow flexible tube, but are spaced proximally from the at least one electrode on the distal end to form a flex point in the electrode catheter between the magnets and the at least one electrode.

18. (previously presented) The electrode catheter according to claim 16 wherein the plurality of magnets are relatively closely spaced within the hollow flexible tube, and wherein the tube can telescope out of a sleeve beyond the most proximal of the magnets, to form a flex point in the electrode catheter between the magnets and the sleeve.

19. (currently amended) A method of mapping the electrical characteristics of the left atrium of the heart comprising:

providing a magnetically navigable electrode catheter comprising a sleeve having a proximal end and a distal end, an extension member having a proximal end and a distal end, the extension member being slidably mounted in the sleeve so that the distal end portion telescopes from the distal end of the sleeve, the distal end portion of the extension member being relatively more flexible than the distal end of the sleeve;

providing at least one electrode on the distal end of the extension member; and at least one magnet on the distal end of portion of the extension member, wherein the distal end portion of the extension member containing the at least one magnet is relatively rigid and the portion of the extension member just proximal to the at least one magnet is flexible;

introducing the distal end of the magnetically navigable electrode catheter into left atrium;

moving the electrode into contact with a selected point on the surface of the left atrium by applying an external magnetic field, such that the catheter bends at a point proximal to the distal end portion having the at least one magnet, and selectively telescoping extension member relative to the sleeve to bring the electrode on the distal end of the extension member into contact with the specific point on the surface of the left atrium;

measuring the electrical characteristics of the left atrium between the electrodes.

20. (original) The method according to claim 19 wherein the magnetically navigable electrode catheter further comprises a sheath having a proximal end and a distal end, the sleeve being slidably mounted in the sheath so that the distal end portion of the sleeve telescopes from the distal end of the sheath, and wherein the step of moving the electrode into contact with a selected point on the surface of the left atrium includes selectively telescoping the sleeve relative to the sheath.

21. - 25. (Cancelled)

26. (original) The method according to claim 19 wherein the extension member has a lumen extending at least partly therethrough, the method comprising inserting a stylette into the lumen in the extension member to stiffen the extension member.

27. (original) The method according to claim 19 wherein the extension member has a lumen extending at least partly therethrough, the method comprising inserting a pre-shaped stylette into the lumen in the extension member to shape the extension member to facilitate navigation of the extension member.

28. (original) The method according to claim 19 wherein the extension member has a lumen extending at least partly therethrough, the method comprising inserting a stylette into the lumen in the extension member and pushing the stylette to push the extension member.

29. (original) The method according to claim 21 wherein the extension member has a lumen extending at least partly therethrough, the method comprising inserting a stylette into the lumen in the extension member to stiffen the extension member.

30. (original) The method according to claim 21 wherein the extension member has a lumen extending at least partly therethrough, the method comprising inserting a pre-shaped stylette into the lumen in the extension member to shape the extension member to facilitate navigation of the extension member.

31. (original) The method according to claim 21 wherein the extension member has a lumen extending at least partly therethrough, the method comprising inserting a stylette into the lumen in the extension member and pushing the stylette to push the extension member.

32. (previously presented) A telescoping medical device comprising:

an outer sheath and an inner core slidably disposed in the sheath and telescopable therefrom;

the distal end of the inner core being orientable independently of the direction of the outer sheath from which the inner core telescopes.

33. (previously presented) A method of navigating the distal end of a medical device in an operating region in a subject, the method comprising:

advancing a telescoping medical device comprising an outer sheath and an inner core slidably disposed in the outer sheath and telescopable from the distal end thereof, to the operating region;

deploying the core element from the distal end of the outer sheath; and

orienting the core element in the direction different from the orientation of the distal end of the outer sheath.

34. (previously presented) A method of contacting the distal end of a medical device with a surface in an operating region in a subject, the method comprising:

advancing a telescoping medical device comprising an outer sheath and an inner core slidably disposed in the outer sheath and telescopable from the distal end thereof, to the operating region;

orienting the distal end of the outer sheath in a direction generally facing the surface to be contacted;

deploying the core element from the distal end of the outer sheath;

orienting the distal end of the core element toward the desired contact point on the surface and advancing the core element to bring the distal end in contact with the surface.

35. (New) The catheter of claim 12 wherein the first electrode is connectable to a source of energy to permit ablation of tissue, the first electrode be configured to create at least a focal lesion at a single point, and to be navigated along a tissue surface to ablate the underlying tissue and create a line of continuous lesions.

36. (New) The catheter of claim 35, further comprising lead wires connected to the first and second electrodes configured to be connected to a measuring device, wherein the second electrode is electrically insulated from the first electrode to enable measurement of the electrical potential between the first and second electrodes for measuring monopolar or bipolar electrical impulses.

37. (New) The catheter of claim 12, wherein the distal end portion of the extension member containing the at least one magnet is relatively rigid such that the application of a magnetic field causes the catheter to bend at a point proximal to the at least one magnet.

38. (New) The catheter of claim 12, wherein at least the first electrode on the distal end is radio-opaque to provide for feedback of the position of the first electrode in a fluoroscope image.